


The glove scanner is a general-purpose Hyperlabel scanner particularly suited to automatic scanning of stock during handling, such as during shelf replenishment. Unlike other glove-mounted bar code scanners which image in a direction parallel to the outstretched finger, the Hyperlabel glove scanner images in a direction normal to the underside of the grasping finger. This mode of operation is made possible by the smallness of the field of view required to acquire a Hyperlabel tag, i.e. of the order of 5mm.

In the glove scanner 5000, the viewing distance is shortened relative to the viewing distance in the hand-held scanner 4000 and netpage pen 3000. This allows the imaging unit 5008 to be compact, but reduces the depth of field. This is not a problem, however, since the imaging unit is designed to be used when close to and parallel to a tagged surface.

The imaging unit 5008 contains the same optical components as the hand-held scanner, including the near-infrared illumination LEDs 2414. In addition, it incorporates a 30-60-90 prism 5012 which folds the imaging cone (to line it up with the image sensor mounted almost normally to the surface 5014) and increases the viewing distance. Since the thimble is less susceptible to ambient light than the hand-held scanner, the near-infrared filter 2104 is optional.

The imaging unit also incorporates the trigger switch (not shown) which registers contact with a tagged surface. Alternatively or additionally, the trigger switch may be placed between thumb and forefinger for manual activation.

The imaging unit incorporates both the image sensor 2412 and the image processor 2410, which are usefully combined into a single compact chip  as described in the co-pending US application USSN ~~/~~ entitled "Image Sensor with Digital Framestore" (docket no. NPS047-US-NPS054) filed 17 February 2004.

The imaging unit 5008 is connected to the processing unit 5006 via a power and high-speed data cable 5010. The remainder of the scanner electronics are incorporated in the processing unit, including the processor 2400 and communications interface 2424. The processing unit is connected to an external control unit via a power and data cable 2504 in the usual way.

Both the imaging unit 5008 and the processing unit 5006 are attached to a harness 5004, constructed from elastic material, which is worn like a glove.

8.4.2.1 FIXED HYPERLABEL LASER SCANNER

A first example of a design of a fixed Hyperlabel laser scanner 254 will now be described.

Figure 76 shows the central unit 1501 of a preferred embodiment of a fixed Hyperlabel laser scanner 1500 suitable for incorporation in a retail checkout 1000.

To accommodate as large a proportion as possible of the full range of product items which may need to be scanned, the Hyperlabel scanner 1500 is designed to accurately scan any item which fits on the